

## CLAIMS:

1. A broadcast system for broadcasting at least one title using a near-video-on-demand broadcasting protocol; the system includes:

a plurality of broadcast receivers;

5 a hierarchical network of data distributors starting from a central distributor through at least one layer of intermediate distributors to the broadcast receivers for broadcasting the title as a sequence of data blocks;

at least one filter controller operative to receive requests from broadcast receivers for the supply of the title and for controlling at least one intermediate distributor to filter out data blocks of the title that have not been requested by receivers hierarchically  
10 below the intermediate distributor.

2. A broadcast system as claimed in claim 1, wherein data blocks of the title are broadcast via a plurality of channels using sequential time-slots within the channels according to a near-video-on-demand schedule that for each data block of the title prescribes  
15 a time-slot and channel for broadcasting the data block relative to a time-slot used for broadcasting a first data block of the title; data blocks assigned to a channel being repeatedly broadcast within the channel; the filter controller being operative to:

store information on all receivers hierarchically below the intermediate distributor that have requested the title (hereinafter "interested receivers") to enable the filter  
20 controller to determine for each channel whether at least one of the interested receivers needs to receive a data block assigned to the channel; and

control the intermediate distributor to filter out a channel if no interested receiver needs to receive a data block assigned to the channel.

25 3. A broadcast system as claimed in claim 2, wherein the near-video-on-demand schedule prescribes that data blocks of the title are broadcast via  $c$  parallel equal capacity channels of the broadcast system, where each broadcast channel is associated with a respective sequential channel number; the title being divided in a plurality of consecutive data block sequences; each block sequence being assigned to one respective channel

according to the sequence of the channel numbers; each channel repeatedly broadcasting the blocks of the assigned block sequence; the broadcast receiver having a capacity to simultaneously receive a plurality  $r$  ( $1 < r \leq c$ ) of the channels; the broadcast receiver being operative to receive a title by starting reception of the sequentially lowest  $r$  channels and each time in response to having received all blocks of the block sequence of a channel  $i$  terminate reception of channel  $i$  and start reception of channel  $r+i$  until all block sequences have been received.

4. A system as claimed in claim 3, wherein the near-video-on-demand schedule prescribes that data blocks of the title are broadcast via  $c$  parallel equal capacity channels of the broadcast system, where each broadcast channel is associated with a respective sequential channel number; a plurality of the broadcast channels including a plurality of time-sequentially interleaved sub-channels; the number of sub-channels in a channel being monotonous non-decreasing with the channel number; the sub-channels in a channel being associated with a respective sequential sub-channel number; the title being divided in a plurality of consecutive data block sequences; each block sequence being assigned to one respective sub-channel according to the sequence of the channel numbers and of the sub-channel numbers; each sub-channel repeatedly broadcasting the assigned block sequence; the broadcast receiver having a capacity to simultaneously receive all sub-channels of a plurality  $r$  ( $1 < r \leq c$ ) of the channels; the broadcast receiver being operative to receive a title by starting reception of all sub-channels of the sequentially lowest  $r$  channels and each time in response to having received all blocks of the block sequence of a sub-channel of channel  $i$  terminating reception of the sub-channel in channel  $i$  and starting reception of a sub-channel of channel  $r+i$  until all block sequences have been received; the filter controller being operative to control the intermediate distributor to filter out a sub-channel if no interested receiver needs to receive a data block assigned to the sub-channel.

5. A system as claimed in claim 2, the filter controller is operative to use the stored information to determine for each channel whether at least one interested receiver needs to receive a data block in a next time-slot of the channel and to control the intermediate distributor to filter out the data block if no interested receiver needs to receive the data block in the next time-slot.

6. A system as claimed in claim 5, wherein the channels are time-multiplexed.

7. A system as claimed in claim 3, wherein the intermediate distributor is operative to extract data blocks broadcast via the  $r$  channels to be received by at least one interested receivers and transmit the extracted data blocks via predetermined channels to the interested receivers.

8. A system as claimed in claim 1, wherein the intermediate distributor includes the filter controller.

9. A system as claimed in claim 1, wherein at least one of the broadcast receivers is operative to communicate to the filter controller via an upstream channel of the broadcast system.

10. A method of broadcasting at least one title as a sequence of data blocks through a hierarchical network of data distributors starting from a central distributor through at least one layer of intermediate distributors to the broadcast receivers using a near-video-on-demand broadcasting protocol; the method including:

receiving requests from broadcast receivers for the supply of the title;

in at least one intermediate distributor filtering out data blocks of the title that

have not been requested by receivers hierarchically below the intermediate distributor.

11. A broadcast receiver for use in a broadcast system as claimed in claim 1 that includes a hierarchical network of data distributors starting from a central distributor through at least one layer of intermediate distributors to the broadcast receivers for broadcasting a title as a sequence of data blocks using a near-video-on-demand broadcasting protocol via downstream channels of the system; the broadcast receivers being operative to communicate to a filter controller via an upstream channel of the broadcast system to enable the filter controller to control at least one intermediate distributor hierarchically above the broadcast receiver to filter out data blocks of the title that have not been requested by receivers hierarchically below the intermediate distributor.

12. A filter controller for use in a broadcast system as claimed in claim 1 that includes a hierarchical network of data distributors starting from a central distributor through at least one layer of intermediate distributors to the broadcast receivers for broadcasting a

title as a sequence of data blocks using a near-video-on-demand broadcasting protocol via downstream channels of the system; the filter controller being operative to receive requests from broadcast receivers for the supply of the title and for controlling at least one intermediate distributor to filter out data blocks of the title that have not been requested by receivers hierarchically below the intermediate distributor.

13. An intermediate distributor for use in a broadcast system as claimed in claim 1 that includes a hierarchical network of data distributors starting from a central distributor through at least one layer of intermediate distributors to the broadcast receivers for broadcasting a title as a sequence of data blocks using a near-video-on-demand broadcasting protocol via downstream channels of the system; the intermediate distributor being operative to filter out data blocks of the title that have not been requested by receivers hierarchically below the intermediate distributor.